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Social Support and Psychopathology in the War Zone

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Unit cohesion and homecoming support are examined for their protective effects on the development of posttraumatic stress disorder (PTSD) and other psychopathology. Data on 1198 male theater veterans were taken from the National Vietnam Veterans Readjustment Study. Unit cohesion had no significant relationship, as a direct effect, to either PTSD or other psychopathology. In a pattern that was *opposite* to predictions from the buffering hypothesis of support, however, a high level of unit cohesion in combination with high war zone stress was associated with the highest levels of PTSD and psychopathology. This is consistent with Israeli experiences, suggesting that unit cohesion may have detrimental long-term effects on psychological well-being. In contrast, homecoming support was related negatively as a direct effect to both PTSD and other psychopathology. In addition, interaction results, consistent with the buffering hypothesis, suggest that the protective effects of homecoming support are magnified for veterans with high compared with low levels of exposure.

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Over the years, people have looked to social support as a source of protection against the adverse effects of exposure to stress (*e.g.*, Cobb, 1976; Cohen and Syme, 1985; Sarason et al., 1989; Uchino et al., 1996). The benefits of social support have been held to be both direct, operating at all levels of stressful exposure, and conditional, operating more strongly at high levels of exposure (*e.g.*, Gerin et al., 1995; Kessler et al., 1985). These differential effects by level of exposure are specified in what has been called the buffering hypothesis of support (*e.g.*, Gore, 1981; Thoits, 1982). The rationale for the hypothesis is that social support is not needed when exposure is absent or low, but that social support serves as a useful resource when exposure is high and people's abilities to cope with it are taxed (Hobfoll, 1985).

Cohesion and morale have long been believed to be important to the optimal functioning of a military unit in performing its duties (von Clausewitz, 1941). Since the Second World War, they have also been recognized as playing an important role in the physical and psychological well-being of individual soldiers (Stouffer, 1949). Bourne (1970, 1972) was among the first to express concern that there were two conditions in the Vietnam conflict that differed from those in World War II and the Korean conflict and that might have undermined the development and availability of unit support. One was the policy of a fixed tour of duty known as DEROS (Date Expected to Return from Overseas). Troops were observed to become preoccupied with their individual dates of return to the detriment of their identification with the fate of their unit. The second was that the ease of communication with home detracted from emotional investment in their unit. The implication attributed to these conditions of lowered cohesion was that they might eventually prove to contribute to higher casualties than those reported initially.

Israeli experiences in the Yom Kippur War of 1973 provided further empirical support to the belief that unit cohesion is a significant factor in mitigating the effects of stressful exposure. In one study, soldiers with a combat stress reaction were four times as likely to report little cohesion in their unit compared with those without a combat stress reaction (Noy, 1978). In another study, paratroopers manifesting combat stress reactions reported both significantly lower levels of unit morale and less trust of their commanders than troopers without a combat stress reaction (Steiner and Neumann, 1978). In part due to these findings, during the Lebanon War in 1982, unit cohesion was mobilized explicitly in the treatment of combat stress reactions close to the front by arranging for visits from unit members (Gal, 1986). These efforts have been credited with contributing to the high percentages of troops who returned to combat (Belenky et al., 1983; Toubiana et al., 1986).

Despite the foregoing theory and data, some have warned that there may be a downside to unit cohesion as well. Milgram and Hobfoll (1986) have suggested that a high degree of unit cohesion may

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accentuate the sense of loss and survivor guilt experienced when members of one's unit are killed or wounded. They suggest that unit cohesion may be helpful in the short run in coping with combat itself but that it may be detrimental in the long run in coping with the aftermath of combat.

There is a further question that derives from the preceding suggestion that unit cohesion might have detrimental long-term effects. Most of the Israeli data were collected during or shortly after the conclusion of the Yom Kippur and Lebanon wars, whereas most of the available data on U.S. veterans have been collected many years after the conclusion of the Vietnam conflict. Symptomatic sequelae represented in the Vietnam data are thus more likely to reflect long-term effects than was the case in the Israeli data. We might anticipate that in the study of long-term effects of war zone stress, as is the case with studies of Vietnam veterans in the late 1980s, the detrimental effect of unit cohesion may predominate over the beneficial effects.

In contrast to unit support, which is available during the period of traumatization, homecoming support occurs after the danger has passed and in a setting of relative safety. There has been a growing literature suggesting that the homecoming may well be a critical event in the development of chronic posttraumatic stress disorder (PTSD). Several studies have reported the absence of support from family and friends after the war to be associated with the development of PTSD symptoms (*e.g.*, Card, 1987; Kadushin et al., 1981; Keane et al., 1985; Wilson and Krauss, 1985). Our own work specifically assessing the homecoming experience has suggested that this event may be a critical transducer of the traumatic exposure in determining whether acute stress reactions are either diminished to subclinical intensity or are preserved undiminished to become recognized at some later date as PTSD (Fontana and Rosenheck, 1994; Johnson et al., 1996).

In this paper, we compare the roles of unit cohesion and homecoming support among Vietnam veterans as main effects in mitigating the psychopathological consequences of stressful exposure, as well as in interaction with the amount of stressful exposure as specified by the buffering hypothesis. Of particular interest is whether the Israeli suggestion that there may be long-term downside effects to unit cohesion is borne out in the Vietnam experience.

Methods

Sample

The National Vietnam Veterans Readjustment Study (NVVRS), conducted from 1986 to 1988, was the source of data for the present study. The NVVRS was conducted on a national sample of veterans who served in the U.S. armed forces during the Vietnam era. The sampling frame was a nationally representative sample of Vietnam veterans screened from military personnel records, which is described in detail in the original publication of the study (Kulka et al., 1990a). The NVVRS includes 1198 male Vietnam theater veterans. Theater veterans are those who served in Vietnam or its surrounding waters or airspace for some period of time from 1964 to 1975. African-American and Hispanic veterans were oversampled deliberately in the NVVRS to ensure stable values for prevalence estimation in these two subgroups. Veterans averaged 42.1 (SD = 5.4) years of age, with 13.4 (SD = 2.4) years of education. Ethnically, 48.9% were white; 26.8% were African-American, and 22.9% were Hispanic, reflecting the oversampling; and 1.4% were of other ancestry. In terms of their marital status, 71.3% were married, 21.3% were divorced or separated, and 6.8% had never been married. By using the unadjusted prevalence data from the NVVRS, 21% of the sample were suffering from PTSD at the time of the survey.

Measures

The NVVRS derived an index of war zone traumatic exposure composed of stressors representing different aspects of combat exposure such as fighting per se, perceived danger of attack, exposure to death and dying, and witnessing and participating in abusive violence. The index was dichotomized for analytical purposes (mean = 1.34, SD = .47). Approximately the top 34% of the subjects, therefore, were categorized as high and the remaining 66% as low in exposure.

Psychopathology is represented by two measures: PTSD and other axis I affective and anxiety disorders. PTSD was measured as the predicted probability of being diagnosed with PTSD as computed by the NVVRS. This variable was derived in the NVVRS by optimizing the prediction of PTSD, as determined by psychiatric interview in a clinical subsample, from other variables that were available in both the clinical subsample and the total survey sample (Kulka et al., 1990b). The resulting logistic regression equation from the clinical subsample was then applied to the same variables in the survey sample to generate the probability of being diagnosed with PTSD. This variable is the basis for the estimates of prevalence generally cited from the study. The mean before sociodemographic adjustment was 0.21 (SD = .32).

Axis I affective and anxiety disorders other than PTSD were determined from the DSM-III diagnoses

obtained from the Diagnostic Interview Schedule (Robins et al., 1981). We characterized the presence of any one of a major depressive episode, manic episode, dysthymic disorder, panic disorder, obsessive compulsive disorder, or generalized anxiety disorder as the presence of another axis I affective or anxiety disorder (mean = .20, SD = .40).

Social support in the war zone was represented by the cohesiveness of the veterans' unit, and support outside the war zone was represented by support from family and friends at the time of their homecoming. Unit cohesion (mean = 19.0, SD = 3.42) was measured as the sum of five items: competence of unit leadership, trust in unit members, helpfulness of unit members toward others, understanding of self by unit members, and emotional closeness to unit members (Cronbach alpha = .72). Homecoming support (mean = 15.80, SD = 1.46) was measured as the sum of two components of support from family and friends: their helpfulness in times of need or emergency as measured by four items (Cronbach alpha = .78), and their availability for talking to and confiding in as measured by three items (Cronbach alpha = .64).

Social desirability was included as a control variable for response bias in reporting on war zone exposure, unit cohesion, homecoming support, and symptoms. The NVVRS included 10 items of the Marlowe-Crowne Social Desirability Scale (Crowne and Marlowe, 1960). This 10-item scale (mean = 15.27, SD = 2.46, Cronbach alpha = .67) was correlated significantly with all of the preceding variables.

In addition, eight sociodemographic variables that were found to be associated significantly with all or some of the exposure, support, and symptom variables were included as control variables as well. These were age (mean = 42.09, SD = 5.35), years of education (mean = 13.39, SD = 2.37), Hispanic ethnicity (mean = .23, SD = .42), and the following characteristics of veterans' childhood: family instability (mean = 2.88, SD = 1.91), conduct disorder behaviors (mean = 1.78, SD = 1.89), physical abuse (mean = .45, SD = .98), drug use (mean = .01, SD = .11), and parental mental illness or substance abuse (mean = .22, SD = .41).

Data Analysis

The relationships between war zone exposure, unit cohesion and homecoming support and psychopathology were first evaluated by two factorial multivariate analyses of covariance (MANCOVA), with social desirability and the sociodemographic variables as covariates. Then univariate analyses of covariance (ANCOVA) were conducted for each measure of psychopathology separately. The dichotomization derived by the NVVRS was utilized in the present study. Unit cohesion and homecoming support were dichotomized at the median of their distributions.

The interactions between exposure on the one hand and unit cohesion and homecoming support on the other are the components of the analyses that are germane to the buffering hypothesis as stated above. The two theoretically relevant comparisons among the four cell means for each ANCOVA are between high and low cohesion/support within each level of exposure. The buffering hypothesis predicts that psychopathology will be higher for subjects with low compared with high cohesion/support within high exposure, but there will be no or less difference in psychopathology for subjects within low exposure. These a priori comparisons among cell means were evaluated by *t*-tests.

Results

The MANCOVA for exposure and unit cohesion produced a significant main effect for exposure (F = 106.83, 2,1109 *df*, $p < .0001$), a nonsignificant main effect for unit cohesion (F = 1.37, 2,1109 *df*, $p > .25$), and a significant interaction between exposure and unit cohesion (F = 10.12, 2,1109 *df*, $p < .0001$). The MANCOVA for exposure and homecoming support yielded significant main effects for both exposure (F = 85.61, 2,1109 *df*, $p < .0001$) and homecoming support (F = 43.06, 2,1109 *df*, $p < .0001$), and a significant interaction between exposure and homecoming support (F = 16.71, 2,1109 *df*, $p < .0001$).

The ANCOVAs yielded highly significant main effects for exposure with both PTSD (F = 213.34, 1,1110 *df*, $p < 0.0001$) and other psychiatric disorders (F = 42.59, 1,1110 *df*, $p < 0.0001$), indicating greater psychopathology with greater exposure. Neither the main effect for PTSD (F = 1.80, 1,1110 *df*, $p > .15$) nor for other psychiatric disorders (F = 2.04, 1,1110 *df*, $p > .15$) was significant for unit cohesion. The main effects for both PTSD (F = 84.62, 1,1110 *df*, $p < 0.0001$) and other psychiatric disorders (F = 22.10, 1,1110 *df*, $p < 0.0001$) were highly significant for homecoming support, however, indicating greater psychopathology with less support.

The interaction results are presented below in detail for each of the analyses. In general, however, the pattern of results for unit cohesion was opposite to that predicted by the buffering hypothesis, whereas the pattern for homecoming support was consistent with the predicted pattern. That is,

TABLE 1
Means and Interaction Effects Between Exposure and Unit Cohesion for PTSD and Other Psychiatric Disorders

Disorder	War Zone Exposure	Unit Cohesion (Means)		Significant Mean Differences	Interaction Effects		
		High	Low		*F*	*df*	*p*
PTSD	High	0.41	0.35	H > L	5.78	1,1110	.02
	Low	0.12	0.14				
Other psychiatric	High	0.38	0.24	H > L	19.80	1,1110	.0001
	Low	0.11	0.19	L < H			

among veterans experiencing high exposure, those in highly cohesive units had more psychopathology than those in units low in cohesion. Among veterans experiencing low exposure, however, those in units high in cohesion had less psychopathology than those in units with low cohesion. Conversely, those high in homecoming support had less psychopathology than those low in homecoming support. In general, this was true for veterans with both high and low exposure, but the buffering effect of support was even greater among those with high compared with low exposure.

The interaction results between unit cohesion and exposure are presented in Table 1. These analyses show that there is a significant interaction for both indices of psychopathology.

Comparison of cell means reveal that, at high levels of exposure, subjects from highly cohesive units had significantly ($p < 0.05$) greater psychopathology than those from units low in cohesion for each type of psychopathology. At low levels of exposure, veterans from highly cohesive units had significantly less prevalence of other psychiatric disorders than veterans from units low in cohesion.

Table 2 presents the interaction results between homecoming support and exposure. There are significant interactions for both PTSD and other psychiatric disorders. Within each level of exposure, veterans who had high levels of homecoming support had less psychopathology than those with low levels of support. The presence of significant interactions, however, indicates that the difference was greater among those with high levels of exposure. For example, whereas among Vietnam veterans exposed to low levels of war zone stress, those with low levels of homecoming support had a prevalence rate of PTSD 60% higher (.16 *vs.* .10) than those with high levels of such support; among those with high levels of exposure, those with low levels of support were more than twice as likely (.47 *vs.* .22) to have PTSD.

Discussion

The absence of significant main effects between unit cohesion and the predicted prevalence of PTSD is at variance with the Israeli data concerning the prevalence of combat stress reactions. It will be recalled that there were differences in the immediacy of data collection between the Israeli and U.S. studies, with the latter taking place 15 years or more after exposure. It is possible, therefore, that the long-term effects of unit cohesion are detrimental whereas the short-term effects are beneficial.

Indications of a downside risk to unit cohesion for both PTSD and other psychiatric disorders is most evident in the interactions between unit cohesion and exposure. Those who had high levels of both exposure and unit cohesion had greater psychopathology than those who had high levels of exposure and low levels of cohesion. This pattern is consistent with Milgram and Hobfoll's (1986) suggestion that high unit cohesion may accentuate the sense of loss and survivor guilt experienced when members of one's unit are killed or wounded.

There are at least two processes by which the exposure of all unit members might contribute to the detrimental effects of unit cohesion. The first is the process suggested by Milgram and Hobfoll (1986). Members might be more affected by exposure because they identify more closely with their fellow members and therefore feel the pain of their adversity more strongly. In addition, close identification with their fellow members might cause them to feel more responsible for their adversity and therefore feel more shame or guilt for failing to prevent the adverse consequences from happening. Although this explanation is intuitively appealing, two further observations suggest that it is not a complete explanation. Internal analyses indicated that the pattern of results for exposure to the death and dying of others is not any stronger or more consistent than it is for other aspects of exposure. Further, the pattern of results for survival guilt is also not any stronger or more consistent than the pattern for other indices of distress.

A second process by which cohesiveness might be detrimental concerns the distinctive influence of fellow unit members who have themselves been traumatized. Combat almost always involved the unit as a whole. Further, much abusive violence was practiced by units acting as a whole, and it is possible

TABLE 2
Means and Interaction Effects Between Exposure and Homecoming Support for PTSD and Other Psychiatric Disorders

Disorder	War Zone Exposure	Homecoming Support (Means)		Significant Mean Differences	Interaction Effects		
		High	Low		*F*	*df*	*p*
PTSD	High	0.22	0.47	L > H	32.39	1,1110	.0001
	Low	0.10	0.16	L > H			
Other psychiatric	High	0.19	0.38	L > H	9.84	1,1110	.002
	Low	0.13	0.17				

that such units were highly cohesive. Paradoxically, cohesiveness might have opposite effects on the nature and availability of support, both of which might be problematic if carried to an extreme. One possible effect is that the more cohesive the unit, the more members share the interpretation of their exposure as dangerous or horrific with each other. The more widely exposure is shared and interpreted in this way, the less available others are to offer a countervailing view. Cohesiveness would then have the effect of exacerbating the negative appraisal of the exposure. The opposite possibility is that members might want to avoid dealing with their stressful exposure. The more cohesive the unit the wider might be a "conspiracy of silence" about the exposure. Under these conditions, cohesiveness would have the effect of inhibiting the processing of members' feelings and thoughts about the exposure.

The difficulty of traumatized members acting as a support to each other might have a counterpart in the difficulty of rap groups serving as a therapeutic forum for their members. Smith, among others, has noted the particularly strong potential for destructiveness as well as helpfulness in the rap group format (Smith, 1985). Because of the strong anger and guilt that are aroused by discussion of war experiences, there is a danger that resistance to self-exploration will lead to a repetitious retelling of stories and a narrowing of acceptable topics and reactions. Rather than exploring the full range of their own thoughts and feelings, members are often drawn into limiting themselves to those themes that are approved and rewarded by the group ethos. Typically, the group ethos has encouraged members to dwell on negative experiences and self-images. Rather than considering ways in which the conditions of war may have forced them to participate in killing and abusive behaviors, and powerfully limited their choices, members of such groups tend to reinforce each other's despair, focusing relentlessly on the grimmest aspects of their experiences, while ignoring the possibilities for healing and personal recovery.

A second aspect of the interactions between unit cohesion and exposure was contrary to the buffering hypothesis and deserves examination, namely, that unit cohesion acted protectively at low levels of exposure when little or no effect was predicted. This pattern can be reconciled with the buffering hypothesis if one adopts the position that there was no truly low exposure condition in the Vietnam theater. The guerrilla nature of the war made the threat of attack ubiquitous. There were no truly safe zones where veterans could lower their guard. It is possible that what qualified as relatively low exposure to stress in the Vietnam theater was comparable to what would qualify as high exposure in civilian life. If that were the case, this second aspect of the interactions between unit cohesion and exposure would be consistent with the buffering of exposure by support. The interaction findings for homecoming support add credence to this interpretation in that, within the significant interaction for PTSD, there was a significantly greater predicted prevalence among those who had low compared with high levels of support even when exposure was low.

The results for homecoming support, in contrast to those for unit support reported above, are strikingly consistent with the buffering hypothesis. It may be that one of the conditions enabling people to be supportive, in the sense of helping to mitigate the effects of traumatic exposure, is that they have not been subjected to the trauma themselves. That is not to say that people who have been exposed themselves cannot be helpful but that it might be especially difficult for them to be so. The danger is that they may end up exacerbating the traumatic effects.

We have noted elsewhere that the homecoming appears to be a critical event in determining whether acute stress reactions are either diminished to subclinical intensity or are preserved undiminished to become recognized at some later point as PTSD (Fontana and Rosenheck, 1994). Our earlier work dealt only with the main effects of the homecoming. The present study indicates that these effects are magnified among those veterans with high levels of exposure. Many veterans return home with doubts concerning the legitimacy and justifiability of their violent and destructive actions during wartime.

Supportive family and friends are likely to enable veterans to express their feelings and thoughts to others, thereby facilitating a constructive assimilation of their war experiences into their civilian lives. Lack of support closes off avenues for veterans to ventilate their feelings and to assimilate the meaning of their experiences. Under these circumstances, acute stress reactions are likely to become repetitive and persistent PTSD symptoms. As time passes, veterans tend to make dysfunctional accommodations in their lives to try to cope with the persisting symptoms. PTSD then becomes reinforced by substance abuse and role failure. Finally, it is likely that the support that was available from others at homecoming is typical of the support that was available in the ensuing years as well. The availability of little or no support could be expected to perpetuate and reinforce entrenchment of PTSD as a chronic condition.

We should not close without acknowledging two limitations to our study. First, all data have been obtained retrospectively. They are subject, therefore, to a potential bias in reporting that Brown (1974) has discussed as an "effort after meaning." That is, respondents with illnesses may report more instances of adversity or less instances of help to account for their illnesses in their own minds. Although we cannot rule out the possibility that the obtained relationships might be due to a similar effort after meaning, it is difficult to understand how such an effort would produce interactions that were exactly the *opposite* of support after the war between psychopathology and support during the war.

Second, our explanations for the detrimental effects of unit cohesion have been made a posteriori and do not have an independent empirical basis. They do fit the data well, however, and have some prior theorizing to support them. At the very least, they would appear to be useful as empirical hypotheses for further investigation. Regardless of their accuracy, the fact remains that this study has discovered a strong pattern of findings that suggest that unit cohesion is not an unmixed blessing.

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